

**III. Amendment to the Claims:**

**Please amend the claims as set forth below. All amendment is supported by the specification and, thus, no new matter is presented. Please cancel Claims 1-53 from the parent application and add new Claims 54-102.**

Claims 1-53 (canceled).

54. (New) A method for detecting head motion and providing feedback to a user engaged in a physical activity, comprising:

providing head gear for wearing on a user's head, wherein the head gear comprises at least one sensor for detecting motion of the head gear;

providing a processor that

stores predetermined head motion value data corresponding to a preferred path of motion for the head gear, and

receives input from the sensor indicative of the motion of the head gear;

comparing measured head motion data based on the input from the sensor to the predetermined head motion value data; and

generating a feedback signal indicating the result of the comparison;

wherein the physical activity is a repetitive physical activity; and

wherein the processor stores predetermined head motion value data for a plurality of phases of the repetitive physical activity.

55. (New) The method of claim 54, wherein the physical activity comprises hitting a golf ball.

56. (New) The method of claim 54, wherein the physical activity comprises hitting a golf ball and the predetermined head motion value data corresponds to backswing head motion.

57. (New) The method of claim 54, wherein the physical activity comprises hitting a golf ball and the predetermined head motion value data corresponds to forward swing head motion.
58. (New) The method of claim 54, wherein the physical activity comprises hitting a golf ball and the predetermined head motion value data corresponds to follow-through head motion.
59. (New) The method of claim 54, wherein the physical activity comprises hitting a golf ball and the predetermined head motion value data corresponds to midpoint head motion.
60. (New) The method of claim 54, wherein the physical activity comprises hitting a golf ball and the predetermined head motion value data corresponds to at least two of backswing head motion, midpoint head motion, forward swing head motion, and follow-through head motion.
61. (New) The method of claim 54, wherein the physical activity comprises hitting a ball with a bat and the predetermined head motion value data corresponds to a load pitch position.
62. (New) The method of claim 54, wherein the physical activity comprises hitting a ball with a bat and the predetermined head motion value data corresponds to forward swing head motion.
63. (New) The method of claim 54, wherein the physical activity comprises hitting a ball with a bat and the predetermined head motion value data corresponds to follow-through head motion.
64. (New) The method of claim 54, wherein the physical activity comprises hitting a ball with a bat and the predetermined head motion value data corresponds to at least two of a load pitch position, forward head motion, and follow-through head motion.
65. (New) A method for detecting head motion and providing feedback to a user engaged in a physical activity the method comprising:

providing head gear for wearing on a user's head, wherein the head gear comprises at least one sensor for detecting motion of the head gear;

providing a processor that

stores predetermined head motion value data corresponding to a preferred path of motion for the head gear, and

receives input from the sensor indicative of the motion of the head gear;

comparing measured head motion data based on the input from the sensor to the predetermined head motion value data; and

generating a feedback signal indicating the result of the comparison;

wherein the physical activity is a repetitive physical activity; and

wherein the processor stores predetermined head motion values for a plurality of phases of the repetitive physical activity;

wherein the physical activity comprises hitting a golf ball and the step of comparing further comprises comparing the measured head motion data to stored head motion value data corresponding to backswing head motion; and

wherein the step of comparing comprises comparing the measured head motion data to stored head motion value data to evaluate (a) rotation of the head gear about an axis in the vertical plane and at least one of (b) translation along an axis in the horizontal plane and (c) rotation along an axis in the horizontal plane.

66. (New) A method for detecting head motion and providing feedback to a user engaged in a physical activity the method comprising:

providing head gear for wearing on a user's head, wherein the head gear comprises at least one sensor for detecting motion of the head gear;

providing a processor that

- stores predetermined head motion value data corresponding to a preferred path of motion for the head gear, and
- receives input from the sensor indicative of the motion of the head gear;
- comparing measured head motion data based on the input from the sensor to the predetermined head motion value data; and
- generating a feedback signal indicating the result of the comparison;
- wherein the physical activity is a repetitive physical activity; and
- wherein the processor stores predetermined head motion values for a plurality of phases of the repetitive physical activity;
- wherein the physical activity comprises hitting a golf ball and the step of comparing further comprises comparing the measured head motion data to stored head motion value data corresponding to forward swing head motion; and
- wherein the step of comparing comprises comparing the measured head motion data to stored head motion value data to evaluate (a) rotation of the head gear about an axis in the vertical plane and at least one of (b) translation along an axis in the horizontal plane and (c) rotation along an axis in the horizontal plane.

67. (New) A method for detecting head motion and providing feedback to a user engaged in a physical activity the method comprising:

- providing head gear for wearing on a user's head, wherein the head gear comprises at least one sensor for detecting motion of the head gear;
- providing a processor that

stores predetermined head motion value data corresponding to a preferred path of motion for the head gear, and

receives input from the sensor indicative of the motion of the head gear;

comparing measured head motion data based on the input from the sensor to the predetermined head motion value data; and

generating a feedback signal indicating the result of the comparison;

wherein the physical activity is a repetitive physical activity; and

wherein the processor stores predetermined head motion values for a plurality of phases of the repetitive physical activity;

wherein the physical activity comprises hitting a golf ball and the step of comparing further comprises comparing the measured head motion data to stored head motion value data corresponding to follow-through swing head motion; and

wherein the step of comparing comprises comparing the measured head motion data to stored head motion value data to evaluate (a) rotation of the head gear about an axis in the vertical plane and at least one of (b) translation along an axis in the horizontal plane and (c) rotation along an axis in the horizontal plane.

68. (New) An apparatus for detecting the motion of a user's head during the user's performance of a physical activity, the apparatus comprising:

at least one sensor, wearable on the user's head, wherein the sensor detects motion of the user's head;

a processor that

stores predetermined head motion value data corresponding to a preferred path of motion for the head gear,

receives input from the sensor indicative of the motion of the head gear, and  
compares measured head motion data based on the input from the sensor to the  
stored head motion value data; and  
a feedback indicator that generates a feedback signal indicative of the result of the  
comparison; and

wherein the physical activity is a repetitive physical activity; and  
wherein the processor stores predetermined head motion value data for a plurality of  
phases of the repetitive physical activity.

69. (New) The apparatus of claim 68, wherein the physical activity comprises hitting a golf ball and the predetermined head motion value data corresponds to backswing head motion.

70. (New) The apparatus of claim 68, wherein the physical activity comprises hitting a golf ball and the predetermined head motion value data corresponds to forward swing head motion.

71. (New) The apparatus of claim 68, wherein the physical activity comprises hitting a golf ball and the predetermined head motion value data corresponds to follow-through head motion.

72. (New) The apparatus of claim 68, wherein the physical activity comprises hitting a golf ball and the predetermined head motion value data corresponds to midpoint head motion.

73. (New) The apparatus of claim 68, wherein the physical activity comprises hitting a golf ball and the predetermined head motion value data corresponds to at least two of backswing head motion, midpoint head motion, forward swing head motion, and follow-through head motion.

74. (New) The apparatus of claim 68, wherein the physical activity comprises hitting a ball with a bat and the predetermined head motion value data corresponds to a load pitch position.

75. (New) The apparatus of claim 68, wherein the physical activity comprises hitting a ball with a bat and the predetermined head motion value data corresponds to forward swing head motion.

76. (New) The apparatus of claim 68, wherein the physical activity comprises hitting a ball with a bat and the predetermined head motion value data corresponds to follow-through head motion.

77. (New) The apparatus of claim 68, wherein the physical activity comprises hitting a ball with a bat and the predetermined head motion value data corresponds to at least two of a load pitch position, forward head motion, and follow-through head motion.

78. (New) The apparatus of claim 68, wherein the at least one sensor further comprises:  
a band, wearable about the user's head, and comprising at least three sensor nodes positioned around the band.

79. (New) The apparatus of claim 68, wherein the at least one sensor comprises at least one gyroscopic sensor and at least one accelerometer sensor.

80. (New) The apparatus of claim 68, further comprising a user interface for inputting information relating to the physical activity.

81. (New) The apparatus of claim 80, wherein the wherein the input information comprises information relating to a club type or swing type.

82. (New) The apparatus of claim 80, wherein the input information selects among at least two different types of sports activities.

83. (New) A method of evaluating a physical activity by processing head motion data, comprising:

providing a head device including sensors for sensing head motion during a repetitive type of physical activity;

providing a processor device including stored predetermined value data corresponding to preferred head motion, the stored predetermined values corresponding to a plurality of identified phases of the physical activity;

wearing said head device during the physical activity;

receiving input data from said sensors corresponding to head motion during the physical activity;

processing the input data according to the stored predetermined values to generate a feedback signal; and

wherein the feedback signal represents at least one of a positive and a negative feedback for one or more of said plurality of identified phases.

84. (New) The method of claim 83, wherein the physical activity is a golf swing and the phases include at least two of a backswing, a forward swing, and a follow-through.

85. (New) The method of claim 83, further comprising the step of receiving a user input of a club type or a swing type.

86. (New) The method of claim 83, wherein the physical activity is a baseball swing and the phases include a forward swing and a follow-through.